

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (Previously Presented) A teaching device for teaching a robot of positions for performing an operation on an object, comprising:

storage means storing a positional relation between the robot and the object;

first displaying means for displaying an image of a model of the robot on a display device movable, with an operator, around the object;

specifying means operable by the operator for specifying a direction of a present position of the operator with respect to the robot, referring to the model of the robot displayed on the display device;

second displaying means for displaying an image of a three-dimensional model of the object, as viewed from the specified direction of the operator, on the display device; and

manual operation means for enabling the operator to operate the robot manually for designating positions for performing the operation on the object, referring to the image of the three-dimensional model of the object displayed on the display device.

2. (Previously Presented) A teaching modification device for modifying at least one of positions of taught points and orientations at the taught points, for performing an operation on an object by a robot, comprising:

storage means for storing a positional relation among the robot, the object and the taught points;

first displaying means for displaying an image of a model of the robot on a display device, movable with an operator around the object;

specifying means operable by the operator for specifying a direction of a present position of the operator with respect to the robot, referring to the model of the robot displayed on the display device;

second displaying means for displaying an image of a three-dimensional model of the object and the taught points, as viewed from the specified direction of the operator, on the display device; and

manual operation means for the operator to operate the robot manually for modifying at least one of positions of the taught points and orientations at the taught points, referring to the image of the three-dimensional model of the object and the taught points displayed on the display device.

3. (Previously Presented) A teaching device for teaching a robot of positions for performing an operation on an object, comprising:

storage means storing a positional relation between the robot and the object;

first displaying means for displaying an image of a model of the object on a display device movable, with an operator, around the object;

specifying means operable by the operator for specifying a direction of a present position of the operator with respect to the object, referring to the model of the object displayed on the display device;

second displaying means for displaying an image of a three-dimensional model of the object as viewed from the specified direction of the operator on the display device; and

manual operation means for enabling the operator to operate the robot for designating positions for performing the operation on the object, referring to the image of the three-dimensional model of the object displayed on the display device.

4. (Previously Presented) A teaching modification device for modifying positions of taught points, or orientations at the taught points, for performing an operation on an object by a robot, comprising:

storage means storing a positional relation among the robot, the object and the taught points;

first displaying means for displaying an image of a model of the object on a display device movable, with an operator, around the object;

specifying means for enabling the operator to specify a direction of a present position of the operator with respect to the object, referring to the model of the robot displayed on the display device;

second displaying means for displaying an image of a three-dimensional model of the object and the taught points as viewed from the specified direction of the operator on the display device; and

manual operation means for enabling the operator to operate the robot for modifying positions of the taught points or orientations at the taught points, referring to the three-

dimensional model of the object and the taught points displayed on the display device.

5. (Previously Presented) A teaching modification device for modifying at least one of positions of taught points and orientations at the taught points for performing an operation on an object by a robot, comprising:

storage means storing a positional relation among the robot, the object and the taught points;

displaying means for displaying an image of a three-dimensional model of the object and the positions of the taught points on a display device movable with an operator around the object;

selecting means operable by the operator for selecting one of the taught points displayed on the display device;

determining means for determining whether or not a selected taught point is visible without interference on the display device in a direction of a present line of sight on the three-dimensional model; and

altering means for altering the line of sight on the three-dimensional model on the display device such that the selected taught point is visible without interference in the direction of the altered line of sight when it is determined that the selected taught point is not visible on the display device by said determining means.

6. (Previously Presented) A robot teaching device according to claim 1, wherein at least an image of a part of a model of a tool attached to the robot is displayed on the display device with the display of the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.

7. (Previously Presented) A robot teaching device according to claim 2, wherein at least an image of a part of a model of a tool attached to the robot is displayed on the display device with the display of the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.

8. (Previously Presented) A robot teaching device according to claim 3, wherein at least an image of a part of a model of a tool attached to the robot is displayed on the display device with the display of the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.

9. (Previously Presented) A robot teaching device according to claim 4, wherein at least an image of a part of a model of a tool attached to the robot is displayed on the display device with the display of the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.

10. (Previously Presented) A robot teaching device according to claim 5, wherein at least an image of a part of a model of a tool attached to the robot is displayed on the display device with the display of the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.